AMENDMENT OF THE CLAIMS:

Please amend claims 121, 122, 145, 146 and 150 as follows:

Claims 1-120 (canceled)

Claim 121 (currently amended): A laser scanning system employing light-diffractive optics and mode detection and switching and supporting sampling periods, said laser scanning system comprising:

a laser light source for emitting a laser light beam having a characteristic wavelength and capable of mode switching;

an optical subsystem, including at least one diffractive optical element, for directing a first portion of the laser light beam into a scanning region and directing a second portion of the laser light beam to an optical detector, wherein said optical detector generates a first electrical signal in response thereto;

a temperature control element, in thermal contact with said laser light source, for adjusting the temperature of said laser light source during each sampling period of said laser scanning system;

signal processing and control circuitry, operably coupled between said optical detector and said temperature control element, for generating a second electrical signal representing a change in the characteristic wavelength of ~~the~~ said laser light beam ~~emitted from said laser light source~~ based upon the first electrical signal, and generating a control signal for controlling said temperature control element so as to adjust the temperature of said laser light source based upon the second electrical signal; and

wherein said signal processing and control circuitry controls said temperature control element so as to adjust the temperature of said laser light source in the event that said second electrical signal exceeds a predetermined threshold value;

wherein said signal processing and control circuitry generates a binary mode switching signal having a logic level indicating whether said second electrical signal representing a change in the characteristic wavelength of ~~the~~ said laser light beam ~~emitted from said laser light source~~ exceeds said predetermined threshold value,

wherein said binary mode switching signal is supplied to a microcontroller programmed to execute a control routine that controls said temperature control element so as to adjust temperature of said laser light source is response to the logic level of said binary mode switching signal;

wherein said control routine controls said temperature control element so as to either heat or cool said laser light source when the logic level of said binary mode switching signal indicates that a change in the characteristic wavelength of said laser light source occurred in the last sampling period of said laser scanning system; and

wherein said control routine controls said temperature control element to maintain the temperature of said laser light source when the logic level of said binary mode switching signal indicates that a change in the characteristic wavelength of said laser light source did not occur in the last sampling period of said laser scanning system.

Claim 122 (currently amended): The laser scanning system of claim 121, wherein a lookup table is used to generate said control signal supplied to said temperature control element in order to heat, cool or maintain the temperature of said laser light source; and

wherein the values of said control signal stored in said lookup table are based upon the value of said control signal when mode switching begins, and the time duration of mode switching.

Claim 123 (previously presented): The system of claim 121, wherein temperature adjustment of said laser light source results in a decrease in variation of the characteristic wavelength of said laser light source.

Claim 124 (previously presented): The system of claim 121, wherein a zeroth order beam is produced by the at least one diffractive optical element, and wherein said optical detector is aligned with the zeroth order beam.

Claim 125 (previously presented): The system of claim 121, wherein said laser light source comprises a visible laser diode.

Claim 126 (previously presented): The system of claim 125, wherein the visible laser diode comprises at least one solid-state lasing element.

Claim 127 (previously presented): The system of claim 121, wherein the diffractive optical element comprises a holographic optical element that directs light reflected off surfaces in the scanning region along a return optical path to at least one photodetector, and wherein said signal processing and control circuitry analyzes signals generated by the at least one photodetector in response to light received along the return optical path.

Claim 128 (previously presented): The system of claim 127, wherein said optical subsystem comprises a rotating disc with multiple holographic optical elements disposed thereon for generating a scan pattern through the scanning region.

Claim 129 (previously presented): The system of claim 121, wherein said laser light source and said optical subsystem generate at least one AM modulated laser beam for generating range data characterizing at least one spatial dimension of objects passing through scanning region.

Claim 130 (previously presented): The system of claim 129, wherein the at least one spatial dimension comprises a profile, volume, or velocity of the object passing through the scanning region.

Claim 131 (previously presented): The system of claim 121, wherein said optical detector comprises at least one photo-diode device.

Claim 132 (previously presented): The system of claim 121, wherein said temperature control element utilizes an active heating element and a passive cooling element.

Claim 133 (previously presented): The system of claim 132, wherein the active heating element comprises a resistor in thermal contact with said laser light source.

Claim 134 (previously presented): The system of claim 132, wherein said passive cooling element comprises a heat sink in thermal contact with said laser light source, and wherein said heat sink passively dissipates heat to ambient air.

Claim 135 (previously presented): The system of claim 121, wherein said temperature control element comprises a resistive element affixed to a heat sink in thermal contact with said laser light source.

Claim 136 (previously presented): The system of claim 135, wherein temperature of said laser light source is adjusted by varying power supplied to said resistive element.

Claim 137 (previously presented): The system of claim 135, wherein temperature of said laser light source is adjusted by varying duty cycle of a pulse modulated power signal supplied to said resistive element.

Claim 138 (previously presented): The system of claim 121, wherein said temperature control element comprises a thermoelectric device in thermal contact with said laser light source.

Claim 139 (previously presented): The system of claim 121, wherein said signal processing and control circuitry comprises a high gain amplifier for amplifying said first electrical signal.

Claim 140 (previously presented): The system of claim 139, wherein said signal processing and control circuitry comprises at least one AC coupling capacitor, operatively coupled between said optical detector and said high gain amplifier, for eliminating the coupling of DC noise therebetween.

Claim 141 (previously presented): The system of claim 121, wherein said signal processing and control circuitry generates third and fourth electrical signals based upon said first electrical signal, the third electrical signal representing an average wavelength of the laser light beam over

a predetermined time period, and the fourth electrical signal representing the current wavelength of the laser light beam.

Claim 142 (previously presented): The system of claim 141, wherein said signal processing and control circuitry comprises a first RC network, coupled to an output of said high gain amplifier, that generates the third electrical signal.

Claim 143 (previously presented): The system of claim 141, wherein said signal processing and control circuitry comprises a first comparator, whose inputs are supplied with the third and fourth electrical signals and whose output is coupled to a second RC network.

Claim 144 (previously presented): The system of claim 143, wherein said signal processing and control circuitry generates the second electrical signal representing a change in characteristic wavelength of the laser light beam emitted from said laser light source based upon output of the second RC network.

Claim 145 (currently amended): The system of claim 144, wherein said signal processing and control circuitry comprises a second comparator that compares the second electrical signal and a predetermined threshold signal, and outputs said binary mode switching signal indicating whether the second electrical signal representing a change in characteristic wavelength of the laser light beam ~~emitted from said laser light source~~ exceeds the predetermined threshold signal.

Claim 146 (currently amended): The system of claim 141, wherein said signal processing and control circuitry comprises analog to digital conversion circuitry for converting the third and fourth signals to digital values, and wherein the digital values are output to said microcontroller programmed to execute said control routine that:

i) generates the second electrical signal, in digital form, representing a change in characteristic wavelength of the laser light beam ~~emitted from the laser light source~~ based upon the digital values supplied from said analog to digital conversion circuitry; and

ii) upon determining that the second electrical signal exceeds the predetermined threshold value, controls said temperature control element to adjust temperature of said laser light source in response thereto.

Claim 147 (previously presented): The system of claim 121, wherein maximum power is applied to said temperature control element in heating said laser light source.

Claim 148 (previously presented): The system of claim 121, wherein said control routine operates, in response to reaching a maximum control value, to switch direction in adjusting temperature of said laser light source to thereby cool said laser light source to bring the laser light source out of mode switching.

Claim 149 (previously presented): The system of claim 121, wherein said control routine controls cooling of said laser light source by applying minimum power to an active heating element, to thereby allow a passive cooling element to cool said laser light source.

Claim 150 (currently amended): The system of claim 121, wherein said control routine operates, in response to reaching a minimum control value, to switch direction in adjusting the temperature of said laser light source to thereby heat said laser light source to bring said laser light source out of mode switching.